

(b) *Return splits.* (1) If used to monitor return air splits under § 75.362(f), AMS sensors shall monitor the mine atmosphere for percentage of methane in each return split of air from each working section between the last working place, or longwall or shortwall face, ventilated by that air split and the junction of that return air split with another air split, seal, or worked-out area. If auxiliary fans and tubing are used, the sensor also shall be located outby the auxiliary fan discharge.

(2) If used to monitor air splits under § 75.323(d)(1)(ii), AMS sensors shall monitor the mine atmosphere at the following locations:

(i) In the return air course opposite the section loading point or, if auxiliary fans and tubing are used, in the return air course outby the auxiliary fans and a point opposite the section loading point.

(ii) Immediately inby the location where the split of air meets another split of air, or inby the location where the split of air is used to ventilate seals or worked-out areas.

(c) *Electrical installations.* If used to monitor the intake air ventilating underground transformer stations, battery charging stations, substations, rectifiers, or water pumps under § 75.340(a)(2), at least one sensor shall be installed to monitor the mine atmosphere for carbon monoxide or smoke at least 50 feet and no more than 100 feet downstream in the direction of air flow.

(d) *Signals and alarms.* (1) A person designated by the operator shall be at a surface location where the signals and alarms from the AMS can always be seen or heard while anyone is underground. This person shall have access to two-way communication with working sections and with other identifiable duty stations underground. A mine map showing the underground monitoring system shall be posted at the surface location.

(2) If a signal from any AMS sensor is activated, the monitor producing the signal shall be identified, an examination shall be made to determine the cause of the activation, and appropriate action shall be taken.

(e) *Sensors.* (1) Each carbon monoxide sensor shall be capable of detecting

carbon monoxide in air at a level of ± 1 part per million throughout the operating range.

(2) Each methane sensor shall be capable of detecting 1.0 percent methane in air with an accuracy of ± 0.2 percent methane.

(3) Each smoke sensor shall be capable of detecting the optical density of smoke with an accuracy of ± 0.005 per meter.

(f) *Testing and calibration.* At least once every 31 days—

(1) Each carbon monoxide sensor shall be calibrated with a known concentration of carbon monoxide and air sufficient to activate an alarm;

(2) Each smoke sensor shall be functionally tested;

(3) Each methane sensor shall be calibrated with a known methane-air mixture; and

(4) Each oxygen sensor shall be calibrated with air having a known oxygen concentration.

(g) *Intrinsic Safety.* Components of AMS installed in areas where permissible equipment is required shall be intrinsically safe.

(h) *Recordkeeping.* If a signal device or alarm is activated, a record shall be made of the date, time, type of sensor, and the reason for its activation. Also the maximum concentration detected at the sensor producing the signal shall be recorded.

(i) *Retention period.* Records shall be retained for at least 1 year at a surface location at the mine and made available for inspection by authorized representatives of the Secretary and representatives of miners.

§ 75.352 Return air courses.

Entries used as return air courses shall be separated from belt haulage entries by permanent ventilation controls.

§ 75.360 Preshift examination at fixed intervals.

(a)(1) Except as provided in paragraph (a)(2) of this section, a certified person designated by the operator must make a preshift examination within 3 hours preceding the beginning of any 8-hour interval during which any person is scheduled to work or travel underground. No person other than certified

examiners may enter or remain in any underground area unless a preshift examination has been completed for the established 8-hour interval. The operator must establish 8-hour intervals of time subject to the required preshift examinations.

(2) Preshift examinations of areas where pumpers are scheduled to work or travel shall not be required prior to the pumper entering the areas if the pumper is a certified person and the pumper conducts an examination for hazardous conditions, tests for methane and oxygen deficiency and determines if the air is moving in its proper direction in the area where the pumper works or travels. The examination of the area must be completed before the pumper performs any other work. A record of all hazardous conditions found by the pumper shall be made and retained in accordance with § 75.363.

(b) The person conducting the preshift examination shall examine for hazardous conditions, test for methane and oxygen deficiency, and determine if the air is moving in its proper direction at the following locations:

(1) Roadways, travelways and track haulageways where persons are scheduled, prior to the beginning of the preshift examination, to work or travel during the oncoming shift.

(2) Belt conveyors that will be used to transport persons during the oncoming shift and the entries in which these belt conveyors are located.

(3) Working sections and areas where mechanized mining equipment is being installed or removed, if anyone is scheduled to work on the section or in the area during the oncoming shift. The scope of the examination shall include the working places, approaches to worked-out areas and ventilation controls on these sections and in these areas, and the examination shall include tests of the roof, face and rib conditions on these sections and in these areas.

(4) Approaches to worked-out areas along intake air courses and at the entries used to carry air into worked-out areas if the intake air passing the approaches is used to ventilate working sections where anyone is scheduled to work during the oncoming shift. The examination of the approaches to the

worked-out areas shall be made in the intake air course immediately inby and outby each entry used to carry air into the worked-out area. An examination of the entries used to carry air into the worked-out areas shall be conducted at a point immediately inby the intersection of each entry with the intake air course.

(5) Seals along intake air courses where intake air passes by a seal to ventilate working sections where anyone is scheduled to work during the oncoming shift.

(6)(i) Entries and rooms developed after November 15, 1992, and developed more than 2 crosscuts off an intake air course without permanent ventilation controls where intake air passes through or by these entries or rooms to reach a working section where anyone is scheduled to work during the oncoming shift; and,

(ii) Entries and rooms developed after November 15, 1992, and driven more than 20 feet off an intake air course without a crosscut and without permanent ventilation controls where intake air passes through or by these entries or rooms to reach a working section where anyone is scheduled to work during the oncoming shift.

(7) Areas where trolley wires or trolley feeder wires are to be or will remain energized during the oncoming shift.

(8) High spots along intake air courses where methane is likely to accumulate, if equipment will be operated in the area during the shift.

(9) Underground electrical installations referred to in § 75.340(a), except those pumps listed in § 75.340 (b)(2) through (b)(6), and areas where compressors subject to § 75.344 are installed if the electrical installation or compressor is or will be energized during the shift.

(10) Other areas where work or travel during the oncoming shift is scheduled prior to the beginning of the preshift examination.

(c) The person conducting the preshift examination shall determine the volume of air entering each of the following areas if anyone is scheduled to work in the areas during the oncoming shift:

(1) In the last open crosscut of each set of entries or rooms on each working section and areas where mechanized mining equipment is being installed or removed. The last open crosscut is the crosscut in the line of pillars containing the permanent stoppings that separate the intake air courses and the return air courses.

(2) On each longwall or shortwall in the intake entry or entries at the intake end of the longwall or shortwall face immediately outby the face and the velocity of air at each end of the face at the locations specified in the approved ventilation plan.

(3) At the intake end of any pillar line—

(i) If a single split of air is used, in the intake entry furthest from the return air course, immediately outby the first open crosscut outby the line of pillars being mined; or

(ii) If a split system is used, in the intake entries of each split immediately inby the split point.

(d) The district manager may require the certified person to examine other areas of the mine or examine for other hazards during the preshift examination.

(e) *Certification.* At each working place examined, the person doing the preshift examination shall certify by initials, date, and the time, that the examination was made. In areas required to be examined outby a working section, the certified person shall certify by initials, date, and the time at enough locations to show that the entire area has been examined.

(f) *Recordkeeping.* A record of the results of each preshift examination, including a record of hazardous conditions and their locations found by the examiner during each examination and of the results and locations of air and methane measurements, shall be made on the surface before any persons, other than certified persons conducting examinations required by this subpart, enter any underground area of the mine. The results of methane tests shall be recorded as the percentage of methane measured by the examiner. The record shall be made by the certified person who made the examination or by a person designated by the operator. If the record is made by

someone other than the examiner, the examiner shall verify the record by initials and date by or at the end of the shift for which the examination was made. A record shall also be made by a certified person of the action taken to correct hazardous conditions found during the preshift examination. All preshift and corrective action records shall be countersigned by the mine foreman or equivalent mine official by the end of the mine foreman's or equivalent mine official's next regularly scheduled working shift. The records required by this section shall be made in a secure book that is not susceptible to alteration or electronically in a computer system so as to be secure and not susceptible to alteration.

(g) *Retention period.* Records shall be retained at a surface location at the mine for at least 1 year and shall be made available for inspection by authorized representatives of the Secretary and the representative of miners.

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§ 75.361 Supplemental examination.

(a) Except for certified persons conducting examinations required by this subpart, within 3 hours before anyone enters an area in which a preshift examination has not been made for that shift, a certified person shall examine the area for hazardous conditions, determine whether the air is traveling in its proper direction and at its normal volume, and test for methane and oxygen deficiency.

(b) *Certification.* At each working place examined, the person making the supplemental examination shall certify by initials, date, and the time, that the examination was made. In areas required to be examined outby a working section, the certified person shall certify by initials, date, and the time at enough locations to show that the entire area has been examined.

§ 75.362 On-shift examination.

(a) (1) At least once during each shift, or more often if necessary for safety, a certified person designated by the operator shall conduct an on-shift examination of each section where anyone is